

REMARKS

Generally

Claims 13-15 and 21-25 remain pending in the present application. In this Response, claims 13-15 and 21-24 have been amended for clarity and claims 16-20 have been cancelled. Exemplary support for the claim amendments can be found throughout the specification and claims as originally filed. See, for example, cancelled claims 16, 17, 19, and 20.

Applicants respectfully request the Examiner to reconsider and withdraw the outstanding rejections in view of the foregoing amendments and the following remarks.

Rejection under 35 U.S.C. § 112

Claims 13-17, 19, and 20 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite because yarns, fibers, or filaments "mean the same thing" and "the use of a confusing variety of terms for the same thing is not permitted". (Office Action, Page 2). Without conceding the propriety of the rejection and merely to expedite prosecution, as the claims have been amended to delete "fibers or filaments", the rejection of the claims under 35 U.S.C. § 112, second paragraph, is moot.

Rejections under 35 U.S.C. § 102 and § 103

Claims 13-17 and 20 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,714,255 (hereinafter "Yeh") alone or optionally taken with WO 9967451 (hereinafter "Kane"). Claims 13-17 and 19 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Kane. Claims 13-17 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 6,071,612 (hereinafter "Roderiguez"). Claims 13-17 and 19 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent Application No. 10/500,699 (hereinafter "the '699 application"). Claim 20 has been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Yeh or Roderiguez or Kane taken with U.S. Patent No. 5,180,585 (hereinafter "Jacobson"). These rejections are respectfully traversed.

Legal Standards

With regard to the anticipation rejections, it should be noted that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of*

California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). It should further be noted that unless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 USC 102. *Net Moneyin, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 88 U.S.P.Q.2d 1751 (Fed. Cir. Oct. 20, 2008).

With regard to the obviousness rejections, it should be noted that the Office has the initial burden of establishing a factual basis to support the legal conclusion of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). For rejections under 35 U.S.C. § 103(a) based upon a combination of prior art elements, in *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007), the Supreme Court stated that a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

Presently Pending Claims and the Present Disclosure

Amended independent claim 13 recites yarns with antibacterial and antifungal properties, comprising a composition comprising: at least one thermoplastic polymer matrix, wherein the thermoplastic polymer matrix comprises polyamide 6, polyamide 6,6, polyamide 11, polyamide 12, polyamide 4, polyamides 4-6, 6-10, 6-12, 6-36 or 12-12, copolymers and blends thereof; and zinc sulphide particles, wherein the zinc sulphide particles comprise a mineral coating and wherein the zinc sulphide particles have a diameter of less than or equal to 5 μm .

Applicants respectfully submit that the presently described zinc sulphide particles provide antibacterial and antifungal properties to the yarns. (See, for example page 2, lines 21-23 of the present specification). Applicants respectfully submit that these particles are simple, inexpensive, easy to produce and easy to use in articles based on a polymer matrix. (See, for example, page 2, lines 14-16 of the present specification). Applicants further respectfully submit that the zinc sulphide particles disperse readily in the polymer matrix. (See, for example, page 2, lines 24-25 of the present specification). Applicants also

respectfully submit that these zinc sulphide particles have the advantage of withstanding the forming temperature of the thermoplastic matrix and they do not cause problems of degradation, coloration, or yellowing of the yarns. (See, for example, page 3, lines 18-20 and lines 24-25 of the present specification). Furthermore, Applicants respectfully submit that the presently described zinc sulphide particles are not abrasive and have the advantage of being a good delustrant. (See, for example, page 4, line 2 and lines 6-7 of the present specification).

Thus, Applicants respectfully submit that the presently described zinc sulphide particles provide several unexpected technical advantages over the particles described in the art cited by the Examiner.

Cited Art

Yeh describes carpet fibers having added therein phosphorescent pigments, specifically zinc sulphide copper activated pigments. (Col. 1, lines 36-40).

Kane relates to the use of zinc sulphide as a delusterant in a thermoplastic polymer matrix to form flock fibers with reduced wear on the cutting blade. (See page 1, lines 5-10 and page 5, lines 5-7).

Roderiguez describes a process for making a melt-spun polyester fibrous product with a zinc sulphide delusterant, wherein the polyester is polyethylene terephthalate (PET), polybutylene terephthalate (PBT), or polytrimethylene terephthalate (PTT). (Col. 2, lines 28-64).

Jacobson discusses an antimicrobial composition comprising inorganic particles with a first coating comprising metal derivatives providing antimicrobial properties and a second barrier coating comprising silica, silicates, wherein the barrier coating minimizes interaction between the particle and the polymer. (Col. 2, lines 32-44).

The '699 application describes the use of zinc sulphide as an agent for combating acarids. (Abstract).

Differences between Cited Art and Presently Pending Claims

Applicants respectfully submit that none of the cited references disclose or suggest yarns with antibacterial and antifungal properties, comprising a composition comprising: at least one thermoplastic polymer matrix, wherein the thermoplastic polymer matrix comprises polyamide 6, polyamide 6,6, polyamide 11, polyamide 12, polyamide 4, polyamides 4-6, 6-10, 6-12, 6-36 or 12-12, copolymers and blends thereof; and zinc sulphide particles, wherein

the zinc sulphide particles comprise a mineral coating and wherein the zinc sulphide particles have a diameter of less than or equal to 5 μm , as presently recited.

With regard to Yeh, Applicants respectfully submit that Yeh fails to disclose or suggest yarns with antibacterial and antifungal properties, as presently recited. Further, Applicants respectfully submit that Yeh does not disclose the presently recited zinc sulphide particles but instead discloses phosphorescent zinc sulphide copper activated pigments. Applicants respectfully submit that Yeh's phosphorescent zinc sulphide copper activated pigments are not the same as the presently recited zinc sulphide particles. Moreover, Applicants respectfully submit that Yeh does not disclose or suggest zinc sulphide particles having a diameter of less than or equal to 5 μm , as presently recited.

Applicants further respectfully submit that Kane fails to disclose or suggest yarns with antibacterial and antifungal properties, as presently recited. Moreover, Applicants respectfully submit that Kane does not disclose or suggest zinc sulphide particles having a diameter of less than or equal to 5 μm , as presently recited.

With regard to the presently recited zinc sulphide particles having a diameter of less than or equal to 5 μm , Applicants respectfully submit that neither Yeh nor Kane disclose or suggest the foregoing feature. Moreover, Applicants respectfully submit that Yeh and Kane, either alone or in combination, fail to recognize the advantages of the presently recited zinc sulphide particles having a diameter of less than or equal to 5 μm . In this regard, Applicants respectfully direct the Examiner's attention to the present specification which provides that the zinc sulphide particles disperse readily in the polymer matrix. (See, for example, page 2, lines 24-25 of the present specification). Further, as discussed hereinabove, Applicants respectfully submit that these zinc sulphide particles have the advantage of withstanding the forming temperature of the thermoplastic matrix and they do not cause problems of degradation, coloration, or yellowing of the yarns. (See, for example, page 3, lines 18-20 and lines 24-25 of the present specification). Moreover, as discussed hereinabove, Applicants respectfully submit that the presently described zinc sulphide particles are not abrasive and have the advantage of being a good delustrant. (See, for example, page 4, line 2 and lines 6-7 of the present specification).

Applicants respectfully submit that Roderiguez fails to disclose or suggest yarns with antibacterial and antifungal properties, as presently recited. Further, Applicants respectfully submit that Roderiguez does not disclose or suggest a thermoplastic polymer matrix which

comprises polyamide 6, polyamide 6,6, polyamide 11, polyamide 12, polyamide 4, polyamides 4-6, 6-10, 6-12, 6-36 or 12-12, copolymers and blends thereof, as presently recited. In fact, Roderiguez discloses PET, PBT, and PTT as being the polymers of choice. Roderiguez does not disclose the presently recited polyamides. While the background section in Roderiguez discusses polyamides, there is no disclosure anywhere in Roderiguez of the presently recited yarns with antibacterial and antifungal properties, comprising a composition comprising: at least one thermoplastic polymer matrix, wherein the thermoplastic polymer matrix comprises polyamide 6, polyamide 6,6, polyamide 11, polyamide 12, polyamide 4, polyamides 4-6, 6-10, 6-12, 6-36 or 12-12, copolymers and blends thereof; and zinc sulphide particles, wherein the zinc sulphide particles comprise a mineral coating and wherein the zinc sulphide particles have a diameter of less than or equal to 5 μm .

With regard to Jacobson, Applicants respectfully submit that Jacobson does not disclose or suggest the presently recited zinc sulphide particles which provide antibacterial and antifungal properties. In fact, Applicants respectfully submit that Jacobson describes the use of complex particles. (See claim 1 and Col. 2, lines 37-44 of Jacobson). In particular, Applicants respectfully submit that compared with the presently recited zinc sulphide particles, Jacobson's particles are complicated to produce because Jacobson's core particles are coated with two distinct coatings - a first coating comprising metal derivatives providing antimicrobial properties and a second barrier coating comprising silica, silicates, wherein the barrier coating minimizes interaction between the antimicrobial particle and the polymer. (Col. 2, lines 32-44). In contrast with Jacobson, the presently recited zinc sulphide particles do not comprise a first coating comprising metal derivatives which provide antimicrobial properties and a second barrier coating which minimizes interaction between the particle and the polymer. In fact, the presently recited zinc sulphide particles are simple, inexpensive, easy to produce and easy to use in articles based on a polymer matrix. (See, for example, page 2, lines 14-16 of the present specification).

Applicants respectfully submit that the acarids described in the '699 application are not bacteria or fungi. In fact, the '699 application provides that acarids belong to the group of arthropods divided into subclasses: insects and arachnids. (See, for example, paragraph [0016] of the publication of the '699 application). Applicants respectfully submit that insects and arachnids are not the same as bacteria or fungi. Further, Applicants respectfully submit

that the '699 application does not disclose or suggest yarns with antibacterial and antifungal properties, as presently recited.

Thus, Applicants respectfully submit that Yeh, Kane, Roderiguez, Jacobson, and the '699 application, either alone or in any combination, fail to disclose or suggest the presently recited yarns.

Moreover, Applicants respectfully submit that the Examiner seems to be picking and choosing various features of Yeh, Kane, Roderiguez, Jacobson, and the '699 application to obtain the presently recited yarns with antibacterial and antifungal properties. In this regard, it should be noted that M.P.E.P. § 2142 sets forth that impermissible hindsight must be avoided.

Conclusion

In light of at least the foregoing, Applicants respectfully submit that the rejections over Yeh, Kane, Roderiguez, Jacobson, and the '699 application should be withdrawn.

Applicants invite the Examiner to contact Applicants' representative at the telephone number listed below if any issues remain in this matter, or if a discussion regarding any portion of the application is desired by the Examiner.

In the event that this paper is not timely filed within the currently set shortened statutory period, Applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: October 13, 2009

By: 
Shruti S. Costales
Registration No. 56,333

Customer No. 21839
P.O. Box 1404
Alexandria, VA 22313-1404
(703) 836-6620